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Army Service Forces
Quartermaster Corps
CLIMATIC RESEARCH LABORATORY
Lawrence, Massachusetts

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AUTH Letter QMRDW-I

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SECURITY OFFICER

Monthly Report - 2 October 1944

Frank B. Rogers

1. The following reports have been sent to the Office of The Quartermaster General for the approval of Colonel G. F. Doriot;

Report No. 119 - 2 September 1944

Socks, Felt

Substitute for Socks, Wool, Ski in Shoebags

Thermal Insulation, Comfort, Moisture Uptake and Drying Rate
Three Tables and Four Figures

The thermal insulation, comfort, fit, thickness, compression characteristics and the effect of laundering of felt socks versus ski socks in shoebags were determined. The socks were tested in the Cold Room, in the Physics Laboratory and in the field. The following conclusions were drawn:

a. The felt socks are more comfortable than ski socks for field maneuvers in shoebags, either when new or after several day's wear. The felt socks are easy to put on the feet and to remove, even with cold hands.

b. A single pair of felt socks is as warm as two pair of ski socks and significantly warmer than a single pair of ski socks, when the complete footgear includes a pair of Socks, Wool, Cushion Sole, and properly fitting shoebags.

c. A single pair of felt socks weighs slightly more than half as much as two pair of ski socks.

d. Felt socks, when new, are slightly thicker than a single pair of ski socks, but are more compressible. The soles become thinner than ski socks after several days' wear. At the conclusion of exhaustive tests, however, the felt socks showed little evidence of wear.

e. The water absorption per unit weight by the felt socks is less than that by ski socks under all conditions tested. The drying rates of the two types of socks are essentially similar.

f. A smaller sized shoebag is required for a felt sock and a cushion sole sock than for two ski socks and a cushion sole sock.

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R E S T R I C T E D

g. Laundering is followed by slight shrinkage of the felt socks. The shrinkage is most marked after the first laundering, but some additional shrinkage was noted after the second. The mean shrinkage of new socks was approximately eight percent.

h. Laundering is followed by a slight increase in the thickness of the felt socks. This amounted to about 0.02 inches under all loads for the new socks and between 0.03 and 0.04 inches for the sole of the worn felt socks.

On the basis of the findings it was recommended that consideration be given to approving felt socks as a standard item for wear within shoepacs. Recognition should be made of the possible difficulty in providing a properly sized shoepac if such a change in sockgear is approved.

Report No. 96 - 15 September 1944

Hood for Jacket, Field, M-1943

Thermal Insulation, Protection from Wind and Rain, Utility
Five Tables and Three Figures

A single and double-layered hood for the Jacket, Field, M-1943 were studied in the Cold Room, in the All Weather Chamber and in the field for thermal insulation, protection against wind, rain and mist and for general utility. The studies in the Cold Room were at ambient temperatures as low as 0°F. with wind velocities of 3.5 mph. and 20 mph.

The mean tolerance times were 25 percent longer and the skin temperatures were higher for subjects who wore the hood than for those who wore the Cap, Field, Cotton, od., with eartabs down and collar of field jacket turned up. In comparing the single-layered hood with the double-layered hood it was noted that the skin temperatures of the neck were higher with the double-layered item. For protection of undergarments against an artificial rainfall, the hood allowed only 20 percent as much water to penetrate into the pile jacket and wool shirt as when the cap only was worn.

Two modifications of the standard hood were investigated. The use of a pile liner and a serge liner under the hood increased tolerance time and skin temperatures at 0°F. Secondly, in order to obviate the difficulties encountered in the face closure, an additional drawstring closure was devised. It consisted of a drawstring inserted into the tunnel in the hood, beginning in the center at the top of the hood running down the vertical seam almost to the bottom of the hood, thence along each edge to emerge at the front. Several advantages were noted for this modification.

It was concluded that the standard model single-layered hood is a useful and satisfactory item as determined by the conditions of these experiments. It is superior in comfort and utility to the earlier models tested despite the fact that the neck is not kept as warm as by the double-layered item.

R E S T R I C T E D

2. In the Provisional Reports during the past month, tests on the following items were discussed:

Uniforms, Combat, Winter
Jacket, Field, Pile, New Pattern
Fiber Water Content of Sleeping Gear
Cases for Bag, Sleeping, Mountain
Boot, Fabric Top, Experimental
Thermal Insulation and Shoe Fit of Six Sockgear Combinations
Bag, Sleeping, Chenille
Parka and Trousers, Wet Weather
Thermal Insulation of Combat Boots and Shoepacs
Goggles, Electrically Heated
Water-Repellency of Jackets, Field, M-1943
Sleeping Pads

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